Applicants also submit new claims and request that these be included with the elected claims.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks begin on page 15 of this paper.

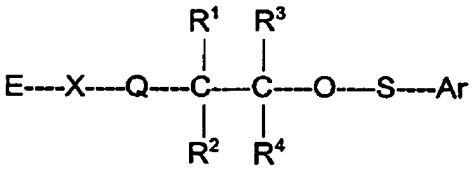
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-14. (CANCELED)

15.(ORIGINAL) A method of performing a phototherapeutic procedure which comprises the steps of:

(a) administering to a target tissue in an animal an effective amount of a sulfenate photosensitizer having the formula



wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, steroid receptor binding molecules, and carbohydrate receptor binding molecules, and dihyroxyindolecarboxylic acid; X is selected from the group consisting of $-(R^5)NOC-$, $-(R^5)NOCCH_2O-$, $-(R^5)NOCCH_2CH_2O-$, and $-HNC(=S)NH$; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, C1-C10 polyhydroxyalkyl, and C1-C10 polyalkoxyalkyl; Q is either a single bond or an alkenyl, aromatic, or heteroaromatic radical derived from a compound selected from the group consisting of olefins,

benzenes, naphthalenes, naphthoquinones, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, and anthacylines; and Ar is an aromatic or heteroaromatic radical derived from a compound selected from the group consisting of benzenes, naphthalenes, naphthoquinones, diphenylmethanes, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, and anthacylines; and

(b) exposing said target tissues with the light of wavelength between 300 and 950 nm with sufficient power and fluence rate to perform the phototherapeutic procedure.

16.(ORIGINAL) The method of claim 15 further comprising the step of allowing said photosensitizer to accumulate in said target tissue.

17.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin

receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is a single bond; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from benzene.

18.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is an alkenyl radical derived from olefins; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from benzene.

19.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is an aromatic radical derived from a compound selected from the group consisting of benzenes, furans, pyrroles, imidazoles, thiophenes, anthraquinones,

quinolines, indoles, acridines, acridones, xanthenes, xanthones, phenanthridines, and anthacylines; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from benzene.

20.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is a single bond; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from anthracene.

21.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is an alkenyl radical derived from olefins; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from anthracene.

22.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is an aromatic radical derived from a compound selected from the group consisting of benzenes, furans, pyrroles, imidazoles, thiophenes, anthraquinones, quinolines, indoles, acridines, acridones, xanthenes, xanthones, phenanthridines, and anthacylines; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from anthracene.

23.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is a single bond; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from acridine.

24.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin

receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is an alkenyl radical derived from olefins; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from acridine.

25.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O-; Q is an aromatic radical derived from a compound selected from the group consisting of benzenes, furans, pyrroles, imidazoles, thiophenes, anthraquinones, quinolines, indoles, acridines, acridones, xanthenes, xanthones, phenanthridines, and anthacylines; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from acridine.

26.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor

binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is a single bond; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from phenanthridine.

27.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is an alkenyl radical derived from olefins; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from phenanthridine.

28.(ORIGINAL) The method of claim 15, wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholesystekinin receptor binding molecules, and steroid receptor binding molecules; X is selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH_2O-; Q is an aromatic radical derived from a compound selected from the group consisting of benzenes, furans, pyrroles, imidazoles, thiophenes, anthraquinones, quinolines, indoles, acridines, acridones, xanthenes, xanthones, phenanthridines, and

anthacylines; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic radical derived from phenanthridine.

29.(ORIGINAL) The method of claim 15 wherein E is associated with a biomolecule selected from the group consisting of hormones, amino acids, peptides, peptidomimetics, proteins, nucleosides, nucleotides, nucleic acids, enzymes, carbohydrates, glycomimetics, lipids, albumins, monoclonal antibodies, polyclonal antibodies, receptors, inclusion compounds, receptor binding molecules, polyaminoacids, polyols, polyamines, polyacids, oligonucleotides, aborols, dendrimers, and aptamers.

30.(ORIGINAL) The method of claim 29 wherein the effective amount of the sulfenate photosensitizer administered to the target tissue is in a range of about 0.1 mg/kg body weight to about 500 mg/kg body weight.

31.(ORIGINAL) The method of claim 30 wherein the effective amount of the sulfenate photosensitizer administered to the target tissue is in a range of about 0.5 mg/kg body weight to about 2 mg/kg body weight.

32.(ORIGINAL) The method of claim 15 wherein the sulfenate photosensitizer is parenterally administered to the target tissue in a formulation including the sulfenate

photosensitizer and materials selected from the group consisting of pharmaceutically acceptable buffers, emulsifiers, surfactants, and electrolytes.

33.(ORIGINAL) The method of claim 32 wherein the formulation is parenterally administered to the target tissue in a concentration in a range of about 1 nM to about 0.5 M.

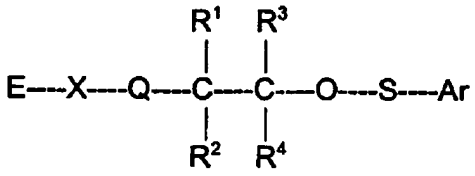
34.(ORIGINAL) The method of claim 15 wherein the sulfenate photosensitizer is enterally administered to the target tissue in a formulation including the sulfenate photosensitizer and materials selected from the group consisting of buffers, surfactants, emulsifiers, and thixotropic agents.

35.(ORIGNIAL) The method of claim 15 wherein the sulfenate photosensitizer is topically administered to the target tissue in a formulation including the sulfenate photosensitizer and materials selected from the group consisting of liquid excipients and semisolid excipients.

36.(ORIGINAL) The method of claim 15 wherein the sulfenate photosensitizer is administered in a form selected from the group consisting of an aerosol spray, a cream, a gel, and a solution.

37. (NEW) A method of performing a phototherapeutic procedure comprising

(a) administering to a target tissue in an animal an effective amount of a sulfenate photosensitizer having the formula



wherein E is a target binding unit; X is an optional linker between the chromophore and the epitope selected from the group consisting of -(R^5)NOC-, -(R^5)NOCCH$_2$O -, -(R^5)NOCCH$_2$CH$_2$O-, and -HNC(=S)NH; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, C1-C10 polyhydroxyalkyl, and C1-C10 polyalkoxyalkyl; Q is either a single bond or an alkenyl, aromatic, or heteroaromatic radical derived from a compound selected from the group consisting of olefins, benzenes, naphthalenes, naphthoquinones, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, and anthacylines; and Ar is an aromatic or heteroaromatic radical derived from a compound selected from the group consisting of benzenes, naphthalenes, naphthoquinones, diphenylmethanes, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles,

imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, and anthacylines; and

(b) exposing said target tissues with light of a wavelength between 300 and 950 nm with sufficient power and fluence rate to perform the phototherapeutic procedure.

38. (NEW) The method of claim 37 further comprising allowing said photosensitizer to accumulate in said target tissue before exposing to light.

39. (NEW) The method of claim 37 wherein E is a receptor binding molecule.

40. (NEW) The method of claim 37 wherein the effective amount of the sulfenate photosensitizer administered to the target tissue is in a range of about 0.1 mg/kg body weight to about 500 mg/kg body weight.

41. (NEW) The method of claim 37 wherein the effective amount of the sulfenate photosensitizer administered to the target tissue is in a range of about 0.5 mg/kg body weight to about 2 mg/kg body weight.

42. (NEW) The method of claim 37 wherein the sulfenate photosensitizer is parenterally administered to the target tissue in a formulation including the sulfenate

photosensitizer and materials selected from the group consisting of pharmaceutically acceptable buffers, emulsifiers, surfactants, and electrolytes.

43. (NEW) The method of claim 37 wherein the formulation is parenterally administered to the target tissue in a concentration in a range of about 1 nM to about 0.5 M.

44. (NEW) The method of claim 37 wherein the sulfenate photosensitizer is enterally administered to the target tissue in a formulation including the sulfenate photosensitizer and materials selected from the group consisting of buffers, surfactants, emulsifiers, and thixotropic agents.

45. (NEW) The method of claim 37 wherein the sulfenate photosensitizer is topically administered to the target tissue in a formulation including the sulfenate photosensitizer and materials selected from the group consisting of liquid excipients and semisolid excipients.

46. (NEW) The method of claim 37 wherein the sulfenate photosensitizer is administered in a form selected from the group consisting of an aerosol spray, a cream, a gel, and a solution.